

The Alabama Climate Report

Brought to you by the Office of the Alabama Climatologist

Volume 9, Number 5, August 2018



Dr. John Christy, Alabama State Climatologist

Lab.

Meteorological summer (June, July and August) is now over and it's time to check how the summer temperatures compare with other years. For a research project a few years ago we developed a statewide summer temperature index for four 100-mile diameter regions centered on the major cities of the state, Mobile, Montgomery, Birmingham and Huntsville going back to 1883. This summer will go down in that database and in NOAA's official records as being slightly cooler than average.

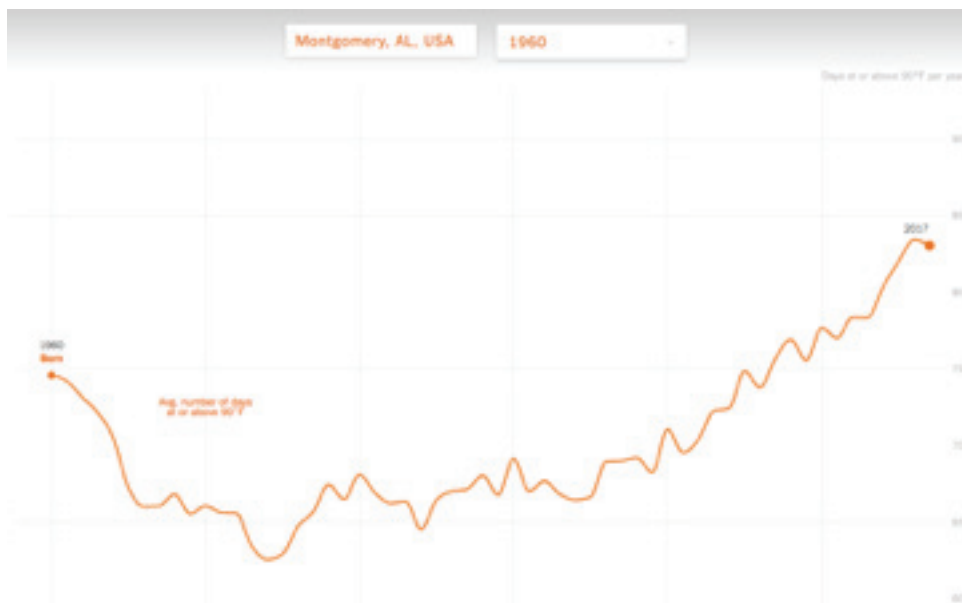
Somewhat related to this, a reader sent me a link to a New York Times interactive website that claims to provide the number of days above 90°F each year for cities across the country. The results are produced for the Times by an outfit (some might call it an environmental pressure group) called the Climate Impacts

<https://www.nytimes.com/interactive/2018/08/30/climate/how-much-hotter-is-your-hometown.html?action=click&module=Most%20Popular&pgtype=Homepage>

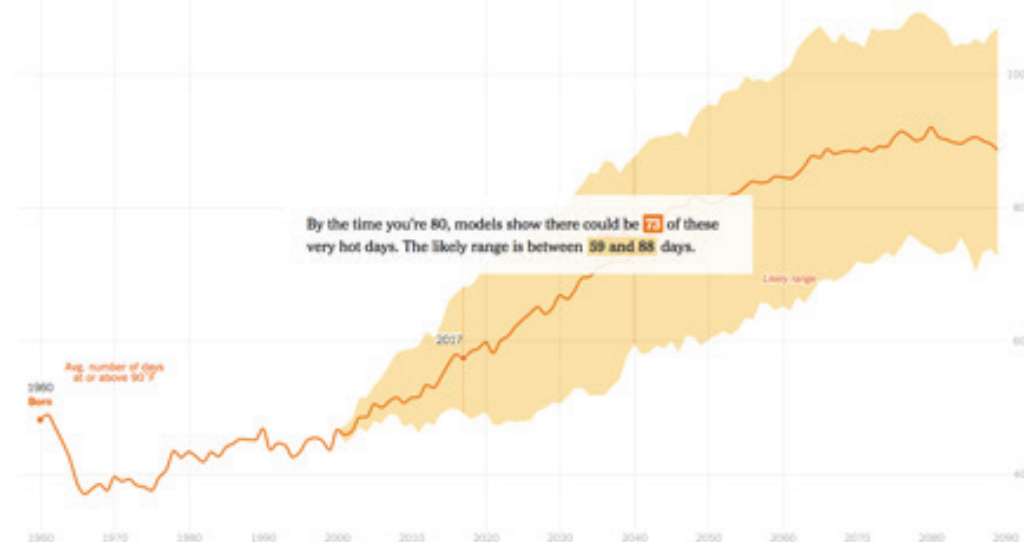
Since I build numerous datasets of this type, I took a look. The website asks you for the town and year in which you were born, then provides a time series purportedly showing the number of 90°F days per year since your birth and how that has increased.

Though a native of California, I have lived in Huntsville more years than any other place, so I put in my birth year and Huntsville as my hometown. Immediately I became suspicious when their dataset started only recently in 1960 (and a few years after my birth!) Evidently the Times and the Climate Impacts Lab don't want to deal with folks older than 58.

For Huntsville and Montgomery, here are their results – kind of scary. It appears that the number of 90°F days has risen to their highest levels ever. I'm told that in 1960 Huntsville had about 45 days above 90°F but by 2017 it was 57 days and rising.

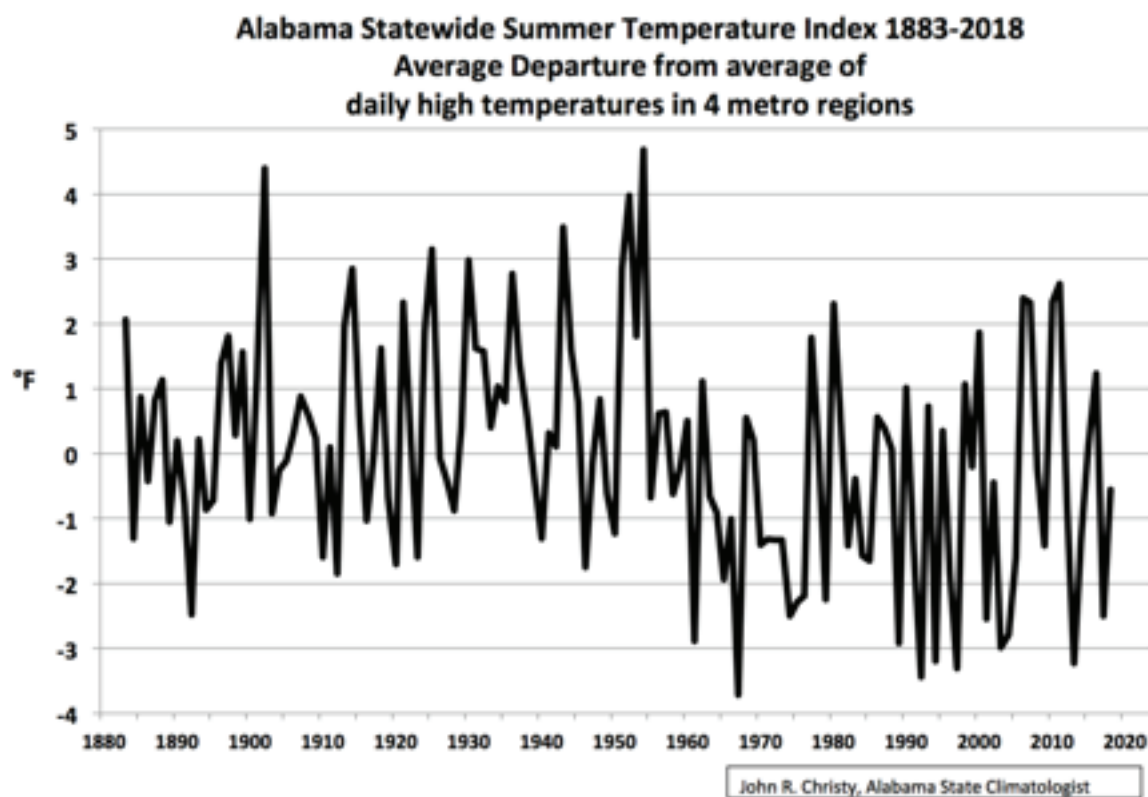


Then, to make matters even scarier, they use climate model projections to 2090 to tell me that when I'm "80" in 2040, there will be 73 such hot days in Huntsville as seen below. Yikes!



Before you sell your house and move to Canada, let's take a look at the real story. Having built many climate datasets of Alabama, some starting as early as 1850, I knew the Times story was designed to create alarm and promote the claim that humans who use carbon-based energy (gasoline, natural gas, coal) to help them live better lives are making our summers ever more miserable. Be aware reader, this webtool is not designed to provide accurate information.

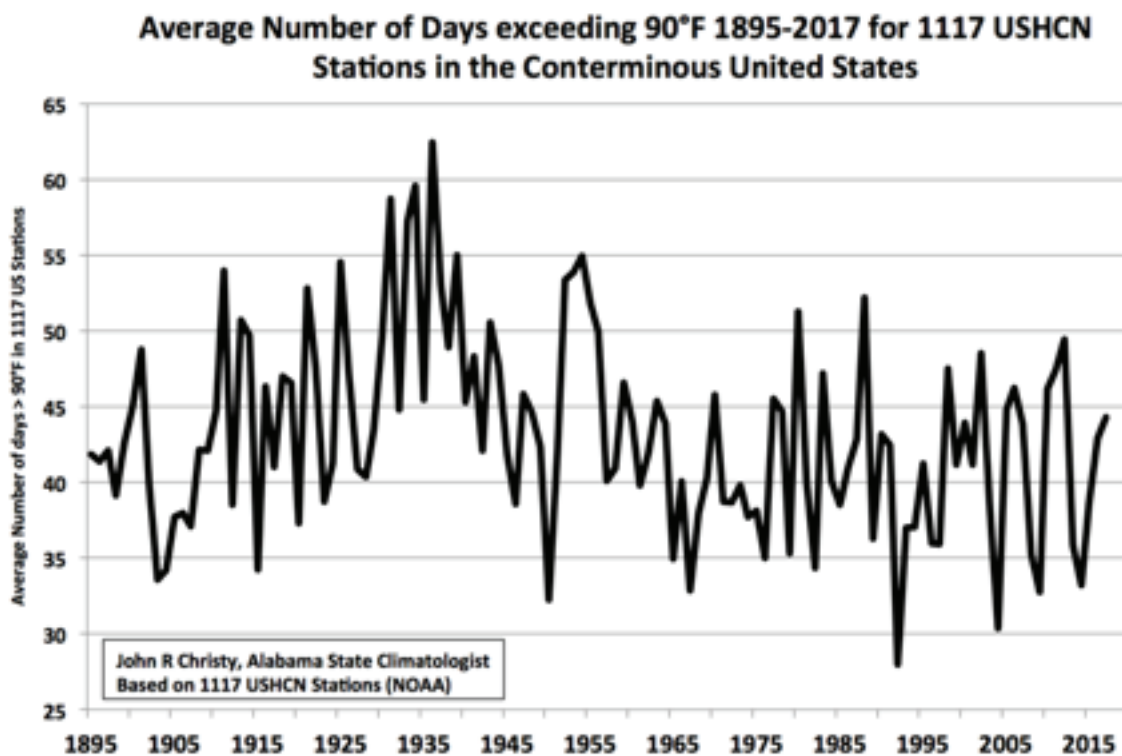
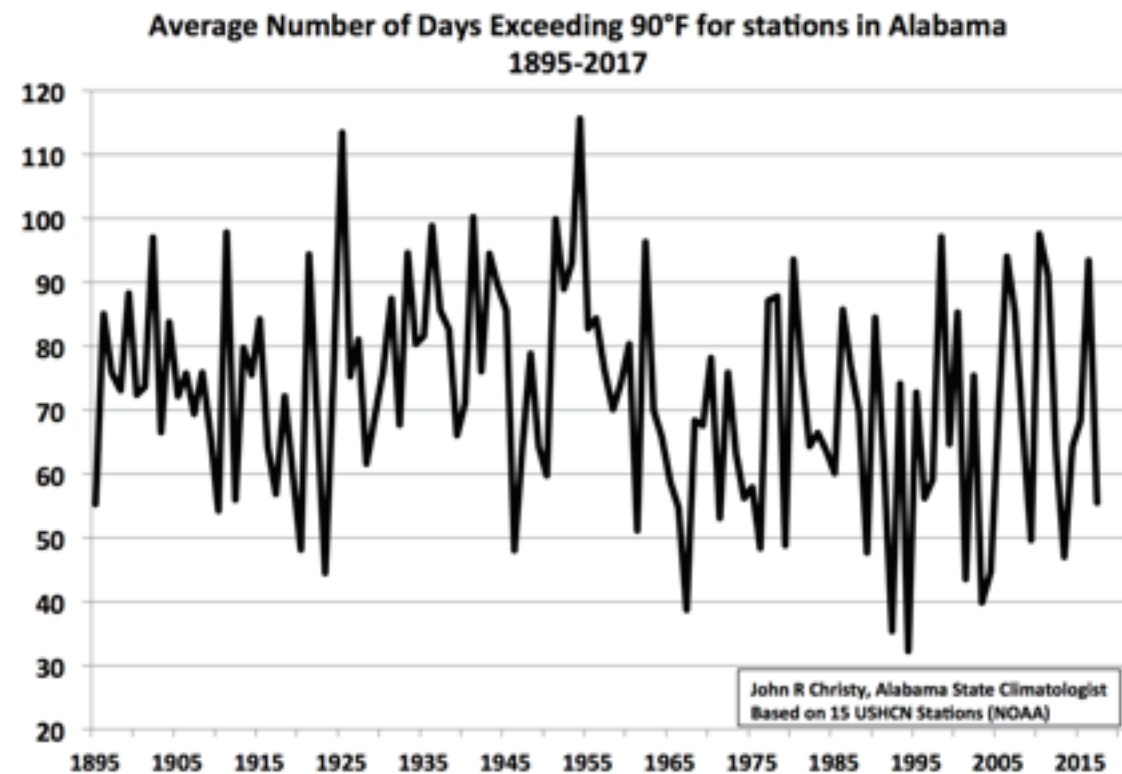
First of all, climate data for Alabama began in the 19th century, not 1960. In 2016 Dr. Richard McNider (Alabama's former State Climatologist) and I published a carefully constructed time series of summer temperatures for the state starting from 1883 that utilized numerous station records, some that even the federal government had not archived into its databases (which is the most common source for outfits like the Climate Impacts Lab.) I've updated that work to include summer temperatures through 2018 – the result is below. Not only are summer daytime temperatures not rising, they have actually fallen over the last 136 years. Hmmm ... after looking at the graph, why do you suppose the Climate Impacts Lab decided to start their charts in 1960?



We went at step further in that paper and demonstrated that climate models failed completely to replicate the downward temperature trend in Alabama over the past 120 years – 76 different models with a 100% failure rate. Would you trust these same models to tell you about the future as the Times does? Why did they not check the models for validity?

Now, what about the number of “hot” (or in Alabama we would say “typical”) 90°F days? For the Alabama and the nation, I've calculated the average value per station each year since 1895. The results below speak for themselves (there is no increase of days hotter than 90°F) and

expose the misinformation provided through the Times.



Providing accurate information on Alabama's climate is what we do in our office. In fact, using real data, I can't even come close to reproducing the images that the Climate Impacts Lab did which show 2010's as having the most 90°F days in Alabama – I'm guessing they are us-

ing some theoretical output rather than sticking with observations. Notice how smooth their graph is compared to real data – it doesn't look real to me. I'll check and follow-up as I can, but something is fishy.

This is a great state in which people can enjoy life and in which businesses can operate – and our climate resources are one of the reasons we are doing so well in recruitment. Occasionally though the time comes when I must address claims made by those whose intention is not to inform but to promote false alarm – this usually happens when an environmental pressure group generates a press release whose dramatic statements are published by a willing media (without any fact-checking.) This is one of those times, and I'm sure it will not be the last.

Citation:

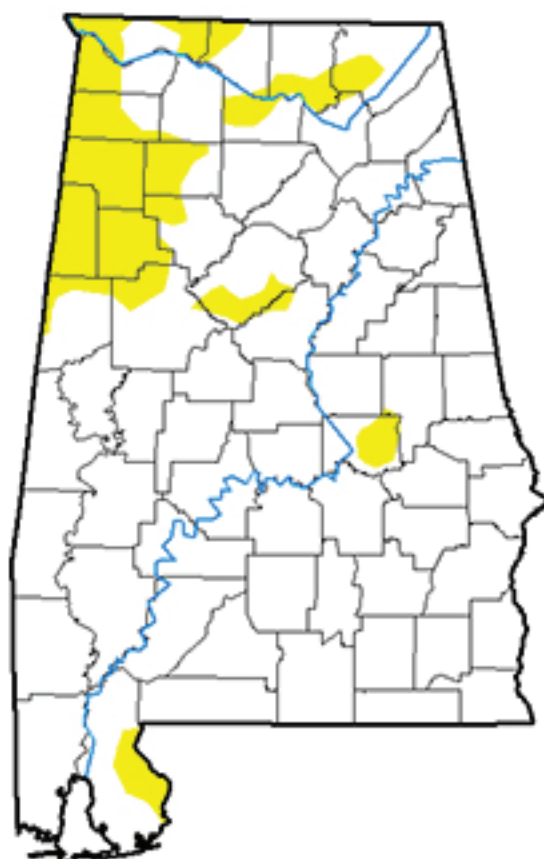
Christy, J.R. and R.T. McNider, 2016: Time series construction of summer surface temperatures for Alabama, 1883-2014, and comparisons with tropospheric temperature and climate model simulations. J. Applied Meteor. Climatology, DOI: 10.1175/JAMC-D-15-0287.1.

Data from the New York Times website accessed on 5 and 6 September, 2018.

- John Christy

U.S. Drought Monitor
Alabama

August 28, 2018
(Released Thursday, Aug. 30, 2018)
Valid 8 a.m. EDT



Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

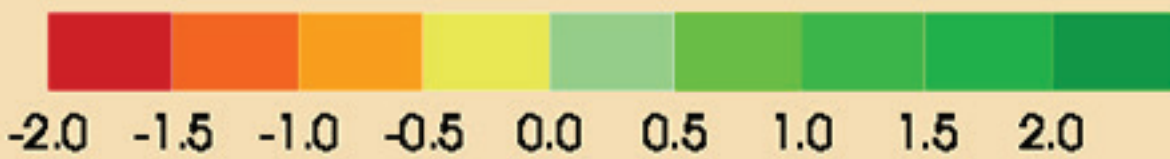
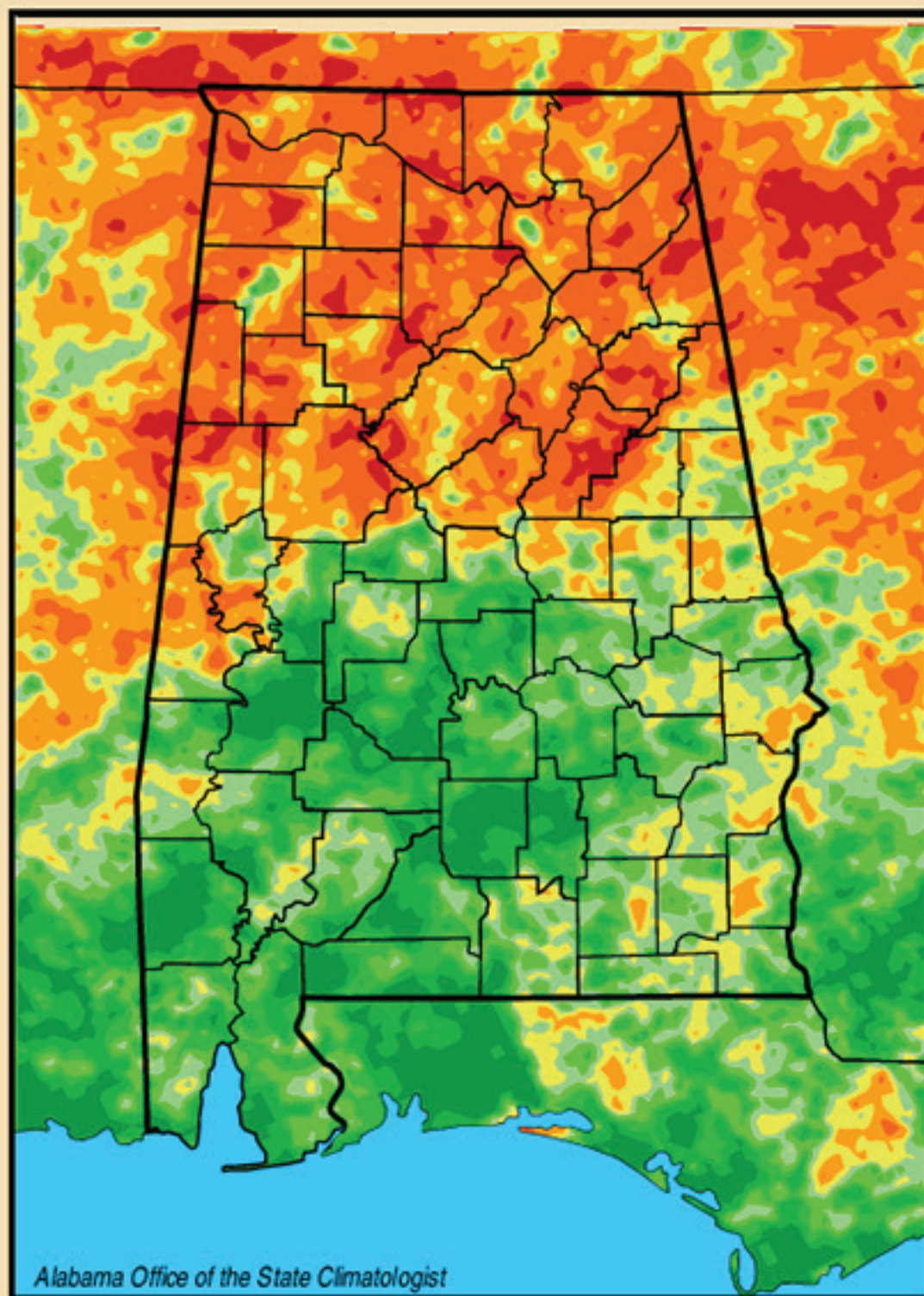
Author:

Jessica Blunden
NCEI/NOAA



<http://droughtmonitor.unl.edu/>

Lawn-and-Garden Moisture Index for September 1, 2018



Alabama Monthly Climate Summaries

August 2018

	Aug. Mean Aug. Norm	Aug. High Temp Record High	Aug. Low Temp Record Low	Total Precip. Normal Precip.	Wettest Aug. Driest Aug.	Heaviest Aug. Record Aug.
Anniston	79.1 79.5	94 8/6/18 106 8/21/83	63 8/24/18 50 8/28/52	3.63" 3.35"	7.54" 1974 .50" 1983	1.74" 8/1/18 5.57" 8/24/67
Auburn	78.9 79.7	92 8/13/18 106 8/20/25	66 8/23/18 54 8/29/68	4.31" 4.29"	11.03" 1944 .01" 1925	2.54" 8/14/18 3.73" 8/17/39
Birmingham	81.2 79.6	95 8/15/18 104 8/8/35	66 8/23/18 51 8/31/46	2.32" 3.48"	8.98" 1998 .38" 1989	1.02" 8/1/18 4.15" 8/2/41
Brewton	76.9 79.7	91.8 8/12/18 104+ 8/13/54	65.5 8/23/18 53+ 8/30/68	8.63" 5.64"	14.69" 1977 1.67" 1980	2.31" 8/10/18 7.20" 8/4/95
Calera	79.9 78.4	93 8/28/18 102 8/10/56	65 8/24/18 50 8/26/66	3.89" 4.23"	15.00" 1939 .33" 1998	1.90" 8/31/18 5.70" 8/26/08
Clanton	76.9 78.3	91.1 8/6/18 105 8/8/35	61.6 8/24/18 51 8/24/57	6.31" 3.73"	7.98" 1974 .45" 1990	3.49" 8/1/18 6.75" 8/26/70
Courtland	78.4 M	95.8 8/15/18 M	57.4 8/24/18 M	2.37" M	M M	1.26" 8/17/18 M
Cullman (St. Bernard)	76.3 M	93.2 8/7/18 M	56.2 8/24/18 M	3.34" M	M M	.95" 8/16/18 M
Decatur (Pryor Field)	78.5 79.8	93 8/8/18 107 8/1/35	68 8/1/18 52 8/26/17	.16" 3.61"	11.93" 1919 .00" 1962	.42" 8/31/18 3.95" 8/22/60
Dothan	81.1 81.2	95 8/13/18 103 8/26/38	68 8/23/18 43 8/24/1902	5.20" 4.81"	20.85" 1939 1.47" 1958	1.28" 8/10/18 4.80" 8/10/31
Fairhope	78.3 81.1	91.7 8/5/18 102 8/30/00	68 8/24/18 60+ 8/30/92	9.58" 6.22"	14.23" 1984 1.25" 1997	1.84" 8/7/18 5.74" 8/2/84
Gadsden	74.6 78.9	89.4 8/6/18 105 8/16/54	58.3 8/23/18 52+ 8/12/67	2.17" 3.65"	9.52" 1992 .10" 1983	.87" 8/1/18 3.32" 8/6/60
Gainesville Lock	78.7 80.3	94 8/6/18 103+ 8/30/00	62.5 8/24/18 55 8/30/86	3.09" 2.91"	8.11" 1992 .37" 1990	1.87" 8/9/18 4.12" 8/10/70
Greensboro	78.1 81.3	93.3 8/7/18 107 8/26/43	63 8/24/18 55 8/22/56	3.65" 3.30"	7.01" 1993 1.16" 1989	1.98" 8/29/18 4.22" 8/31/61
Guntersville	M 78.2	M 105 8/21/83	M 48 8/29/92	M 3.36"	10.33" 1981 .33" 1990	M 5.76" 8/30/81
Highland Home	76.7 79	92.1 8/6/18 103 8/9/54	66.7 8/23/18 56 8/29/92	6.84" 4.30"	8.28" 1984 .89" 1997	1.78" 8/20/18 3.65" 8/12/86
Huntsville	79.5 78.9	93 8/8/18 108 8/8/30	70 8/1/18 50 8/10/1954	.36" 3.42"	9.81" 1986 .58" 1998	.33" 8/8/18 4.29" 8/10/86
Mobile	81.8 81.3	94 8/14/18 105 8/29/2000	69 8/23/18 57 8/25/1891	4.20" 6.20"	15.19" 1984 1.04" 1997	1.81" 8/31/18 5.65" 8/1/84
Montgomery	81.3 81.2	97 8/6/18 104+ 8/24/83	66 8/23/18 56 8/29/92	4.73" 3.63"	10.43" 1984 .73" 1997	1.43" 8/20/18 5.38" 8/2/84
Muscle Shoals Airport	78.4 79.1	96.4 8/6/18 105+ 8/16/54	59 8/24/18 53+ 8/29/92	2.13" 2.96"	6.78" 1979 .15" 1990	.64" 8/10/18 3.43" 8/25/76
Russellville	77 77	94.5 8/28/18 103+ 8/30/00	54.7 8/24/18 46+ 8/29/67	1.25" 2.97"	6.83" 1997 .07" 1999	.68" 8/10/18 3.69" 8/16/85
Scottsboro	75.8 77.7	92.4 8/28/18 105+ 8/16/54	57.8 8/24/18 46 8/23/82	2.10" 3.43"	7.70" 1985 .74" 1999	.66" 8/17/18 4.39" 8/11/01
Selma	77.3 81	93.3 8/6/18 105+ 8/30/54	63.28/24/18 57+ 8/30/92	7.34" 4.01"	8.84" 1984 .71" 1990	1.51" 8/18/18 5.35" 8/15/39
Talladega	77.7 77.3	94.5 8/28/18 103 8/16/54	61.8 8/24/18 46 8/23/50	1.72" 3.52"	9.11" 1984 .60" 1999	1.28" 8/1/18 4.30" 8/11/82
Thomasville	76.9 80.9	92.2 8/7/18 105+ 8/31/54	62.8 8/24/18 53 8/22/56	7.73" 3.88"	9.01" 1996 1.02" 1989	2.85" 8/19/18 6.05" 8/14/39
Troy	76.8 80.2	92.1 8/6/18 106 8/28/54	64 8/23/18 55 8/31/46	5.09" 3.56"	8.38" 1996 .55" 1989	1.20" 8/20/18 6.75" 8/31/61
Tuscaloosa	82.3 81.2	97 8/6/18 107 8/10/07	64 8/24/18 53 8/22/56	5.16" 3.80"	8.84" 1970 .57" 1953	2.46" 8/10/18 2.87" 8/10/67
Valley Head	74.2 75.3	89.5 8/6/18 105 8/16/54	57.8 8/23/18 46 8/13/64	4.31" 3.49"	6.68" 1981 .58" 1983	1.56" 8/2/18 3.61" 8/4/84

Community Collaborative Rain, Hail and Snow Network (CoCoRAHS)

August 2018

	Ave. Total Precip.	# Stations			Ave. Total Precip.	# Stations
Autauga	5.34	2		Houston	7.58	2
Baldwin	8.90	24		Jackson	3.49	5
Barbour	9.87	1		Jefferson	3.13	15
Bibb	4.51	1		Lamar	2.44	1
Blount	3.48	8		Lauderdale	2.98	7
Bullock	n.a.	0		Lawrence	1.88	3
Butler	n.a.	0		Lee	6.62	1
Calhoun	4.70	3		Limestone	4.33	7
Chambers	n.a.	0		Lowndes	n.a.	0
Cherokee	3.95	1		Macon	7.01	1
Chilton	8.85	1		Madison	3.19	18
Choctaw	3.15	1		Marengo	n.a.	0
Clarke	7.25	1		Marion	3.33	1
Clay	n.a.	0		Marshall	4.25	10
Cleburne	n.a.	0		Mobile	7.65	15
Coffee	2.19	1		Monroe	4.99	3
Colbert	2.03	6		Montgomery	4.92	5
Conecuh	n.a.	0		Morgan	4.08	5
Coosa	5.11	2		Perry	n.a.	0
Covington	n.a.	0		Pickens	n.a.	0
Crenshaw	n.a.	0		Pike	n.a.	0
Cullman	1.97	4		Randolph	8.40	2
Dale	7.50	1		Russell	7.89	2
Dallas	4.62	1		St. Clair	4.84	5
DeKalb	4.21	5		Shelby	4.62	17
Elmore	6.04	5		Sumter	n.a.	0
Escambia	10.88	2		Talladega	6.35	4
Etowah	n.a.	0		Tallapoosa	6.35	1
Fayette	2.27	1		Tuscaloosa	4.28	6
Franklin	n.a.	0		Walker	n.a.	0
Geneva	7.41	1		Washington	6.73	1
Greene	n.a.	0		Wilcox	8.34	3
Hale	n.a.	0		Winston	2.14	2

Normal August Precipitation*	
Abbeville	4.63
Alberta	4.22
Alex City	4.50
Aliceville	3.57
Andalusia	5.65
Ashland	4.47
Athens	3.39
Bay Minette	6.44
Bessemer	3.72
Billingsly	4.16
Centreville WSMC	5.02
Chatom	4.69
Claiborne L&D	4.09
Clayton	4.10
Dauphin Isl.	7.19
Elba	4.49
Eufaula WR	3.57
Evergreen	5.07
Fayette	3.84
Geneva 2	5.03
Greenville	4.76
Haleyville	4.35
Hamilton 3S	4.01
Heflin	3.55
Hurtsboro	3.37
Jasper	3.33
Lafayette	4.20
Livingston	4.51
Melvin	6.86
Milstead	4.12
Moulton	3.66
Oneonta	3.31
Perryville	3.56
Plantersville	4.45
Rock Mills	3.85
Rockford	4.90
Sylacauga	3.79
Union Springs	4.48
Uniontown	4.59
Vernon	2.78

New Local Climate Records

Lowest Minimum Monthly Temperature Record						
STATION	DATE	RECORD	PREV. DATE	PREV. RECORD	NUMBER (DIFFERENCE	
GAINESVILLE LOCK, AL US	8/5/18	55	8/30/86	55	60	0
GAINESVILLE LOCK, AL US	8/19/18	54	8/5/18	55	60	-1
Highest Monthly Precipitation Record						
HAMILTON 3 S, AL US	8/19/18	5.5	8/30/05	4.78	56	0.72
Highest Minimum Temperature Daily Record						
RUSSELLVILLE NUMBER 2, AL US	8/16/18	74	8/16/17	73	64	1
VERNON, AL US	8/16/18	73	8/16/17	73	61	0
TUSCALOOSA AIRPORT ASOS, AL US	8/16/18	76	8/16/10	76	70	0
OPELIKA, AL US	8/18/18	73	8/18/17	73	61	0
SYLACAUGA 4 NE, AL US	8/18/18	74	8/18/17	73	63	1
HAMILTON 3 S, AL US	8/19/18	73	8/19/95	73	56	0
HAMILTON 3 S, AL US	8/20/18	73	8/20/95	73	56	0
DAUPHIN ISLAND NUMBER 2, AL US	8/27/18	82	8/27/11	82	42	0
BANKHEAD LOCK AND DAM, AL US	8/28/18	73	8/28/07	73	61	0
MOBILE DOWNTOWN AIRPORT, AL US	8/28/18	81	8/28/60	80	69	1
Lowest Maximum Temperature Daily Record						
ANNISTON METROPOLITAN AIRPORT, AL US	8/1/18	75	8/1/84	78	115	-3
BIRMINGHAM AIRPORT, AL US	8/1/18	76	8/1/84	76	88	0
ENTERPRISE 2 W, AL US	8/2/18	77	8/2/84	77	52	0
GENEVA NUMBER 2, AL US	8/2/18	75	8/2/82	81	42	-6
GUNTERSVILLE, AL US	8/2/18	77	8/2/84	77	108	0
SAND MOUNTAIN SUBSTATION, AL US	8/2/18	70	8/2/84	75	68	-5
SCOTTSBORO, AL US	8/2/18	76	8/2/11	79	126	-3
SYLACAUGA 4 NE, AL US	8/2/18	75	8/2/84	77	63	-2
TALLADEGA, AL US	8/2/18	75	8/2/84	78	124	-3
GENEVA NUMBER 2, AL US	8/3/18	78	8/3/05	82	42	-4
GUNTERSVILLE, AL US	8/3/18	82	8/3/11	82	108	0
OPELIKA, AL US	8/3/18	79	8/3/00	79	61	0
FAIRHOPE 2 NE, AL US	8/20/18	79	8/20/20	81	100	-2
ROBERTSDALE, AL US	8/20/18	78	8/20/42	80	94	-2
Lowest Minimum Temperature Daily Record						
GAINESVILLE LOCK, AL US	8/1/18	62	8/1/97	65	60	-3
FAIRHOPE 2 NE, AL US	8/3/18	66	8/3/17	66	100	0
FAIRHOPE 2 NE, AL US	8/4/18	67	8/4/17	68	100	-1
GAINESVILLE LOCK, AL US	8/4/18	60	8/4/76	63	60	-3
GAINESVILLE LOCK, AL US	8/5/18	55	8/5/74	61	60	-6
GAINESVILLE LOCK, AL US	8/11/18	57	8/11/90	59	60	-2
GAINESVILLE LOCK, AL US	8/12/18	57	8/12/67	57	60	0
GAINESVILLE LOCK, AL US	8/18/18	60	8/18/04	60	60	0
GAINESVILLE LOCK, AL US	8/19/18	54	8/19/04	58	60	-4
GAINESVILLE LOCK, AL US	8/24/18	58	8/24/57	59	60	-1
GAINESVILLE LOCK, AL US	8/28/18	59	8/28/68	59	60	0

Highest Precipitation Daily Record						
ALEXANDER CITY, AL US	8/1/18	1.47	8/1/86	1.3	48	0.17
BILLINGSLEY, AL US	8/1/18	3.25	8/1/84	2.1	79	1.15
DEMOPOLIS LOCK AND DAM, AL US	8/1/18	3.95	8/1/78	2.02	66	1.93
GADSDEN, AL US	8/1/18	1.82	8/1/63	0.89	65	0.93
SAND MOUNTAIN SUBSTATION, AL US	8/1/18	1.95	8/1/13	1.48	69	0.47
ANNISTON METROPOLITAN AIRPORT, AL US	8/1/18	1.74	8/1/43	1.53	115	0.21
CALERA, AL US	8/2/18	2.47	8/2/73	0.77	117	1.7
CLANTON, AL US	8/2/18	2.23	8/2/67	2.15	123	0.08
JACKSONVILLE, AL US	8/2/18	2.25	8/2/09	1	70	1.25
SAND MOUNTAIN SUBSTATION, AL US	8/2/18	0.77	8/2/72	0.77	69	0
SYLACAUGA 4 NE, AL US	8/2/18	1.75	8/2/84	1.42	63	0.33
WALLACE 2 E, AL US	8/17/18	2.4	8/17/06	1.84	77	0.56
JACKSON, AL US	8/18/18	1.26	8/18/01	1.15	56	0.11
BILLINGSLEY, AL US	8/19/18	1.5	8/19/53	0.71	79	0.79
HAMILTON 3 S, AL US	8/19/18	5.5	8/19/69	2	56	3.5
ROBERTSDALE, AL US	8/19/18	2.15	8/19/13	1.79	106	0.36
ATHENS, AL US	8/20/18	0.96	8/20/04	0.89	77	0.07
CHATOM, AL US	8/20/18	4	8/20/03	1.8	68	2.2
MILLERS FERRY LOCK AND DAM, AL US	8/20/18	0.66	8/20/12	0.45	37	0.21
MONTGOMERY AIRPORT, AL US	8/20/18	1.43	8/20/63	1.12	70	0.31
CHATOM, AL US	8/21/18	4	8/21/65	1.65	68	2.35
CHATOM, AL US	8/22/18	1.44	8/22/60	1.27	68	0.17
UNIONTOWN, AL US	8/30/18	2.3	8/30/46	1.89	123	0.41

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